



# Division of Ocean Sciences

Fall 2002 Newsletter

## Rita Colwell Addresses U.S. Commission on Ocean Policy

As Chair of the National Ocean Research Leadership Council (NORLC), NSF Director Rita Colwell testified before the Commission on Ocean Policy on July 23, 2002, regarding the future role of the NORLC and the National Oceanographic Partnership Program (NOPP). The full text of the speech is available at <<http://www.nopp.org>>.



Dr. Colwell identified three primary roles in which NOPP can effect leadership.

First, NOPP provides a valuable forum for addressing shared needs of importance to the ocean science community, including oceanographic facilities and ocean education. Since Dr. Margaret Leinen previously had spoken to the Commission about oceanographic facilities, including renewal of the academic fleet, Dr. Colwell focused on the importance of ocean science education and ocean literacy. In particular, she noted that the pending revision of the National Science Education Standards offers an opportunity to ensure that ocean science will be represented in those standards and, ultimately, in textbooks. The Ocean Research Advisory Panel, NORLC's advisory body, is in the process of preparing recommendations for a NOPP education strategy.

The second role articulated for NOPP is in facilitating and coordinating the transfer of research results into applications that meet societal needs. Dr. Colwell indicated that the Integrated Ocean Observing System (IOOS) is the first major test for this new approach, and the NORLC must ensure its success. NOPP's Ocean.US Office recently convened a workshop that resulted in a summary plan providing recommendations for phased implementation of IOOS (see <<http://www.oceanus.gov>>). NOPP is presently considering a number of interagency and international models in evaluating options for budgeting and management.

The final role Dr. Colwell sees for NOPP is in providing a mechanism for identifying and developing oceanographic

research directions that cut across agency missions. Just as the astronomy community has identified a few overarching questions to provide scientific direction for the entire field of astronomy, Dr. Colwell suggested the need for a mechanism in ocean science to focus on comparable questions that set a long-term direction for oceanographic research. Dr. Colwell anticipates that the oceanographic community will have no shortage of ideas on the subject. Knowledge gained as a result will facilitate rational approaches for addressing societal problems such as global change, fisheries management, toxic blooms, emerging diseases, and marine pollution.

Dr. Colwell concluded by indicating that the roles outlined are all essential elements of a National Science and Technology Strategy for the Oceans. A long-range strategy would provide a broad view of investments and how knowledge coupled with technological innovation can

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## Implementation of New GPG Requirements on Broader Impacts

In March 1997, the National Science Board approved the use of two merit review criteria for NSF proposals: (1) the intellectual merit of the proposed activity; and (2) the broader impacts resulting from the proposed activity. While investigators routinely address the intellectual merit criterion, treatment of broader impacts has been inconsistent. Each issuance of the *Grant Proposal Guide* (GPG) since 1997 has continued to strengthen the coverage relating to the importance of broader impacts in the preparation and

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Dear Colleague,

*The NSF enjoyed considerable funding growth during the past two fiscal years, and the budget of the Division of Ocean Sciences (OCE) increased along with that of the agency. Since FY 2000, the OCE budget increased about \$60 million to our current level of \$281 million. The bulk of the budget increase during this period was approximately evenly divided among agency-wide priority areas, core research programs, and facilities (ship operations, instrumentation, marine tech support, etc.). We also initiated a midsize infrastructure fund based on advice from the Advisory Committee for Geosciences. Our FY 2003 budget (which begins 1 October of this year) is pending before Congress, and the early signs are promising for significant NSF (and OCE) budget increases. Such increases would be great news for basic science in general and oceanography in particular and would lead to new opportunities for academic researchers and educators.*



*What are some of these opportunities? The NSF budget grows in several ways. Some of the future growth will be associated with agency-wide priority areas such as Biocomplexity and Nanotechnology. All NSF directorates, including Geosciences (which encompasses OCE) participate in these programs, and there is considerable intra-agency discussion and negotiation on the specific topics, priorities, directorate funding levels, etc. for these programs. There is not space in this article to provide important details on these programs; I refer you to the NSF website <<http://www.nsf.gov/home/crssprgm/>>, which provides information to help you submit competitive proposals. OCE Program Officers can also provide information. I encourage you to look into the opportunities that these programs provide.*

*Increasing the size and duration of research grants funded through NSF core programs is also an agency priority. Most of the proposals OCE receives in response to the biannual target dates associated with our core research programs are 3-year proposals. In the future, I encourage you to consider submitting proposals requesting funds for up to 5 years. We will give every consideration to proposals that justify more than 3-year duration and larger budgets. Check with one of our Program Officers for additional guidance.*

*To implement the strategy articulated in "NSF Geosciences Beyond 2000," developed with the Advisory Committee and involving extensive community input, the Directorate for Geosciences (atmospheric, earth and ocean sciences) has identified additional research priorities. At present, the four Geosciences priority areas are water cycle, biogeosciences, carbon cycle and natural hazards. Proposals in response to a water cycle announcement last spring are in review, and a biogeosciences research announcement has recently been released. There will be future opportunities for oceanographers, particularly for ocean and integrated carbon cycle studies. The Directorate for Geosciences is also planning joint research programs in cooperation with the scientific directorates of the European Community. Guidance for these opportunities will be posted on our web page and widely distributed in other ways.*

*In addition to Agency and Directorate priorities, OCE plans to advance several Division-specific programs. This fall, OCE and the National Institute of Environmental Health Sciences (NIEHS) plan to issue a joint solicitation for proposals in the area of Oceans and Human Health. In preparation for the Ocean Observatories Initiative, OCE will also be seeking interdisciplinary proposals for time series science, beginning with the February 2003 target date.*

*OCE is very much involved in developing new infrastructure for ocean sciences. Our two largest infrastructure programs, the Ocean Observatories Initiative (OOI) and the Integrated Ocean Drilling Program (IODP), have been approved for inclusion in a future budget request by the National Science*

*Board. Briefly stated, OOI will provide infrastructure funding for coastal, open ocean and regional scale observatories. In 2004, IODP will begin a new decade of scientific ocean drilling, and NSF and international partners will provide funding for new drilling platforms and capabilities. OCE is also working with our partners in the Navy to implement the Federal Oceanographic Facilities Committee (FOFC) plan for renewal of the academic research vessel fleet. Specifically, we are developing final plans for the Alaska Region Research Vessel (ARRV) and plan to submit the construction plan for this vessel to the National Science Board for their consideration. We also anticipate a major role, perhaps the lead role, for funding construction of Regional class vessels and are supporting Navy in planning for the Ocean class. In other news: the new ROV, Jason-2, completed sea trials; a study is underway to evaluate options to replace Alvin with a more capable deep-diving submersible; we are evaluating proposals to put long coring capability on UNOLS ships and we anticipate a proposal to upgrade the seismic capabilities of RV Ewing. Other interesting projects are under consideration.*

*On another front, the Division will be updating its data policy in the near future to reflect changes in opportunities for data sharing that have developed since our policy was last modified in 1994. The National Science Foundation requires the sharing of findings, data and other research products, but leaves it up to the Programs to implement this sharing policy in ways appropriate to the scientific field and to the circumstances. When finalized, the new policy will be announced and included with award letters.*

*Finally, OCE is perpetually seeking Program Officers, particularly for 2-year assignments. This is an exciting time to work for NSF. Please contact the relevant Program Director, or me, if you want to discuss the possibilities.*

*Sincerely,*



*James A. Yoder  
Director  
Division of Ocean Sciences*

(broader impacts continued from page 1)

review of proposals submitted to NSF.

The most recent iteration of the GPG (NSF 03-2), now available at <<http://www.nsf.gov/pubs/ods/getpub.cfm?nsf032>>, clearly states that, effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. The GPG also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative. Examples illustrating activities likely to demonstrate broader impacts are available at: <<http://www.nsf.gov/pubs/2003/nsf032/bicexamples.pdf>>.

To ensure that proposals are treated equitably, FastLane has been enhanced to remind/inform principal investigators of the new proposal preparation requirements. We hope the community will help us avoid returning proposals by ensuring both criteria are addressed in submitted proposals.

(colwell speech continued from page 1)

address societal challenges and needs.

The U.S. Commission on Ocean Policy, chaired by Admiral James Watkins, has recently issued a Mid-Term Report on its findings based on public hearings held over the past year. The Report and additional information on the Commission and its activities are available at <<http://www.oceancommission.gov>>.

## Proposal Target Dates/Deadlines

### Programs

### Target Dates/Deadlines

#### **Ocean Section (OS)\***

Unsolicited proposals for Biological Oceanography, Chemical Oceanography, and Physical Oceanography Feb. 15 & Aug. 15

#### **Marine Geosciences Section (MGS)\***

Unsolicited proposals for Marine Geology & Geophysics and the Ocean Drilling Program Feb. 15 & Aug. 15

#### **Integrative Programs Section (IPS)**

Instrumentation Development/OTIC Feb. 15 & Aug. 15  
 Shipboard Scientific Support Equipment TBD  
 Oceanographic Instrumentation TBD  
 Ship Operations TBD  
 Oceanographic Technical Services TBD

#### **Inter-Agency and Special Initiatives**

Climate Variability and Predictability (CLIVAR) Feb. 15 & Aug. 15  
 Ridge Inter-Disciplinary Global Experiments (RIDGE 2000) Feb. 15 & Aug. 15  
 Continental Margins Research (MARGINS) Nov. 3, 2003 (deadline)  
 Ecology of Harmful Algal Blooms (ECOHAB) Jan. 28, 2003 (deadline)  
 Earth System History (ESH) Jan.15, 2003;Oct.15, 2003  
 Climate Variability and Human Health Dec.16, 2002 (preproposal)  
 Centers for Oceans and Human Health (COHH) Feb.17,2003 (let. of intent)

#### **Other NSF programs of interest to ocean scientists**

Major Research Instrumentation (MRI) Jan. 23, 2003 (deadline)  
 CAREER (Faculty Early Career Development Program), Geosciences Directorate July 24, 2003  
 Research Experiences for Undergraduates (REU) Program Sept.15 (deadline)  
 (contact research program regarding REU Supplements)  
 Biocomplexity in the Environment (BE) deadlines vary  
 Nanoscale Science and Engineering (NSE) Oct. 24, 2002 (deadline)  
 Information Technology Research (ITR) deadlines vary  
 Geoscience Education Oct. 17, 2002 (deadline)  
 Biogeosciences (BioGeo) Dec. 6, 2002 (deadline)  
 Collaborations in Mathematical Geosciences (CMG) Feb. 20, 2003 (deadline)  
 Ecology of Infectious Diseases (EID) Feb. 14, 2003 (deadline)

\* Proposals for field programs that require the use of University-National Oceanographic Laboratory Systems (UNOLS) ships in the following calendar year (2004) must be submitted by the February 15, 2003, target date.

## Overlooked Proposal Guidelines

Two areas of the Grant Proposal Guide (GPG) occasionally overlooked in the proposal preparation process are:

**Font Size.** The GPG outlines minimum requirements for density, height and vertical spacing of characters. It does not suggest a specific font type or size. One example of a font that adheres to the guideline standards is Times New Roman in 11-point font size. Whichever font you choose, please double-check that the requirements are met. Once the document has been loaded into Fastlane, check the font size again before submission to make sure everything loaded correctly.

**Biographical Sketch.** The GPG sets forth specific guidelines for the layout of the Biographical Sketch. Please refer to the Guide for complete requirements. Be sure that only 5 related publications and 5 other significant publications are included. It is also important to include your synergistic activities. When listing advisors, please indicate whether the individual was a master's, doctoral or post-doctoral advisor.

## R E M I N D E R ! ! !

All investigators submitting proposals to the Division of Ocean Sciences that include sea-going field work must also submit an electronic research ship request form and include a copy with the proposal. Electronic ship request forms are available on the UNOLS Home Page web site (<http://www.unols.org>). In addition, investigators submitting proposals that require use of a UNOLS ship to NSF programs other than Ocean Sciences must follow the same procedure.

Please note that ship time requests **must be received by the Feb. 15 target date** to be considered for ship time in the following calendar year.

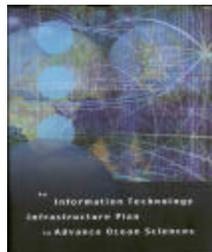
The Grant Proposal Guide can be found at <http://www.nsf.gov/pubs>.

### Top 20 Institutions (based on funding) FY 2001

Research Only			With Ship funding etc.		
	Recipient	Total \$K *		Recipient	Total \$K
1	Woods Hole Ocean Inst	\$22,615	1	Woods Hole Ocean Inst	\$38,028
2	U of Cal SD Scripps Inst	\$15,035	2	U of Cal SD Scripps Inst	\$28,322
3	U of Washington	\$11,276	3	U of Washington	\$14,782
4	Oregon State University	\$8,537	4	Columbia University	\$14,506
5	Columbia University	\$7,220	5	Oregon State University	\$10,546
6	U of Hawaii Manoa	\$6,171	6	U of Hawaii Manoa	\$7,749
7	U Alaska Fairbanks	\$2,929	7	U Alaska Fairbanks	\$4,524
8	U of Rhode Island	\$2,746	8	U of Rhode Island	\$4,219
9	Rutgers	\$2,701	9	U of Miami Sch Mar&Atmos	\$3,190
10	SUNY Stony Brook	\$2,618	10	Harbor Branch Ocean Inst	\$2,848
11	U of Cal Santa Barbara	\$2,608	11	Rutgers	\$2,701
12	U of Miami Sch Mar&Atmos	\$2,207	12	University of Delaware	\$2,626
13	MIT	\$1,684	13	SUNY Stony Brook	\$2,618
14	Old Dominion University	\$1,679	14	U of Cal Santa Barbara	\$2,608
15	University of Southern California	\$1,632	15	Bermuda Biol Sta Research	\$2,340
16	U of MD Ctr Environ Scs	\$1,502	16	Duke	\$2,064
17	Florida State University	\$1,412	17	University of Minnesota	\$1,749
18	Dartmouth	\$1,346	18	MIT	\$1,684
19	University of Delaware	\$1,246	19	Old Dominion University	\$1,679
20	University of Minnesota	\$1,223	20	University of Southern California	\$1,632

\* Does not include funding for Joint Ocean Insts Inc (JOI), NOPP, ship ops, ship technicians, oceanographic instrumentation, shipboard scientific support equipment, Accelerator Mass Spectrometry Facility.

## Publications Available



### *An Information Technology Infrastructure Plan to Advance Ocean Sciences*

Ocean Information Technology Infrastructure Steering Committee

For copies, please e-mail a request to [ocepubs@nsf.gov](mailto:ocepubs@nsf.gov) or go to <http://www.geo-prose.com/oiti/report.html>.

### *Charting the Future for the National Academic Research Fleet: A Long-Range Plan for Renewal*

Federal Oceanographic Facilities Committee

For copies, please e-mail a request to [ocepubs@nsf.gov](mailto:ocepubs@nsf.gov) or go to <http://www.geo.nsf.gov/oce/ocepubs.htm>



### *Ocean Observatories Initiative (OOI) Brochure*

DEOS Steering Committee

For a copy of the brochure, please e-mail a request to [ocepubs@nsf.gov](mailto:ocepubs@nsf.gov). For more information on OOI activities, go to <http://www.COREocean.org/DEOS/>



### *Ocean Sciences at the New Millennium*

Decadal Committee, Peter Brewer and Ted Moore, co-chairs

For copies, please e-mail a request to [ocepubs@nsf.gov](mailto:ocepubs@nsf.gov) or go to [http://www.joss.ucar.edu/joss\\_psg/publications/decadal/](http://www.joss.ucar.edu/joss_psg/publications/decadal/).

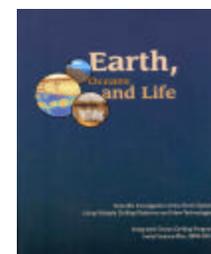


### Sites of Interest

OCE	<a href="http://www.geo.nsf.gov/oce/start.htm">http://www.geo.nsf.gov/oce/start.htm</a>
GEO	<a href="http://www.geo.nsf.gov">http://www.geo.nsf.gov</a>
ODP	<a href="http://www.oceandrilling.org">http://www.oceandrilling.org</a>
JOI	<a href="http://www.joiscience.org">http://www.joiscience.org</a>
UNOLS	<a href="http://www.unols.org">http://www.unols.org</a>
RIDGE	<a href="http://ridge.oce.orst.edu">http://ridge.oce.orst.edu</a>
ECOHAB	<a href="http://www.redtide.whoi.edu/hab">http://www.redtide.whoi.edu/hab</a>
GLOBEC	<a href="http://www.usglobec.org">http://www.usglobec.org</a>
MARGINS	<a href="http://www.ldeo.columbia.edu/margins">http://www.ldeo.columbia.edu/margins</a>
JGOFS	<a href="http://www1.whoi.edu/jgofs.html">http://www1.whoi.edu/jgofs.html</a>
CLIVAR	<a href="http://www.clivar.org">http://www.clivar.org</a>
WOCE	<a href="http://www-ocean.tamu.edu/WOCE/">http://www-ocean.tamu.edu/WOCE/</a>
CoOP	<a href="http://www.skio.peachnet.edu/coop/">http://www.skio.peachnet.edu/coop/</a>

### *Earth, Oceans and Life: Integrated Ocean Drilling Program Initial Science Plan, 2003-2013*

The Initial Science Plan, and additional planning information on the program, is available at <http://www.IODP.org>.



# PROGRAM NEWS

## OCEAN SECTION

### Biological Oceanography

#### New Addition

Lita Proctor arrived in March as a visiting scientist (Associate Program Director) in Biological Oceanography. Lita comes from the Department of Oceanography at Florida State University and is also a Visiting Scientist with the National Research Program, U.S. Geological Survey in Reston. She took her Ph.D. at SUNY Stony Brook. Her current research interests are in microbial ecology, including the diversity and function of communities in marine sediments, biofilms and zooplankton microflora. She has broad experience working both in the water column and in sediments, and on research that spans from marine virus ecology to molecular characterization of microorganisms in the N cycle.

#### Reviewer Workload

Many of you may have noticed a recent increase in the number of proposal review requests that you receive, especially during the Spring months. With an increase in the number of special funding initiatives relevant to biological oceanography (particularly at NSF), with Bio OCE getting actively involved with virtually all of these initiatives, and with projects submitted to other regular core programs, our community is being tapped for an ever-increasing number of reviews.

While we try to limit the number of review requests in our core program, we have less control over requests generated by other programs or in the context of special initiatives. Unfortunately, constraints imposed by the federal fiscal year mean that many of the special programs are run during the Spring, generating a huge pulse of review requests within a relatively short time frame (March-June). We are well aware of the burden this imposes on you in the community, and we are working to try to spread the submission dates and review load throughout more of the year. In the meantime, we apologize for the sometimes excessive number of review requests. We fully appreciate that everybody has multiple commitments, but your participation in the review process is absolutely essential to our efforts to fund the best science. Bio OCE, and OCE in general, tends to place a greater emphasis on getting a good number of mail reviews than programs in many other divisions, so your reviews really do have a major impact on funding decisions. And if you really can't find the time to help out on any particular request, whether due to multiple requests, fieldwork, or

other commitments, please let us know so we can consider the need to make the request of alternate potential reviewers.

Finally, many thanks to our colleagues in the United States and abroad, for the very significant time and effort put into reviewing.

#### U.S. GLOBEC

We recently completed the review and proposal selection for this initial round of Synthesis Activities in the U.S. GLOBEC Northwest Atlantic Program, with six new projects receiving funding. The U.S. GLOBEC Program and the Synthesis Activities are cooperatively supported by NSF and NOAA. More details, including a list of the projects, should be posted on the U.S. GLOBEC website <<http://www.usglobec.org>> soon.

#### U.S. JGOFS

In cooperation with the Chemical Oceanography Program, we recently completed the review and proposal selection for final Synthesis Activities in the U.S. JGOFS Program. The new projects in this final round of synthesis, which will be ongoing for the next three years or so, will soon be posted to the U.S. JGOFS website <<http://usjgofs.whoi.edu>>.

#### ECOHAB

A panel was convened 16-18 April in Washington, D.C. to evaluate 58 proposals submitted to the interagency Ecology and Oceanography of Harmful Algal Blooms (ECOHAB) program. Requests for support totaled \$42 M. Of these, we anticipate supporting between \$5-7 Million for new programs in this 2002 competition. Successful PIs will be contacted by the participating agencies and a final list of funded projects will be posted on the web page of the National Office for Marine Biotoxins and Harmful Algal Blooms at Woods Hole Oceanographic Institution <<http://www.whoi.edu/redtide/>> when agency processing is completed. BioOCE will fund along with NOAA a single, large (5-year, \$5million+), inter-disciplinary project headed by Dr. Barbara Hickey, University of Washington entitled: ECOHAB PNW: Ecology and Oceanography of Toxic Pseudo-nitzschia in the Pacific Northwest Coastal Ocean.

A workshop was held in early September to plan collaborative efforts between the U.S. (ECOHAB) and European (EUROHAB) harmful algal bloom (HAB) research communities. Participants in the workshop were asked to focus on the rationale of taking a comparative ecosystem approach to understanding HAB phenomenon and to identify opportunities for collaboration between the two communities.

Results of the workshop will be made available by postings on the web page of the National Office for Marine Biotoxins and Harmful Algal Blooms at Woods Hole Oceanographic Institution, <<http://www.whoi.edu/redtide/>>. There will be a request for comments on the draft planning document. There will also be a public presentation of the workshop activities at a "town meeting" at the upcoming International HAB conference in St. Petersburg, Florida, in November 2002, and at other forthcoming meetings where the Ocean Science Community is represented.

This activity is part of the continuing involvement of the Biological Oceanography Program, and the U.S. ocean science community in developing the SCOR/IOC international GEOHAB (Global Ecology and Oceanography of Harmful Algal Blooms) Program. It is also part of the ongoing development of cooperation and coordination in environmental research between the NSF and the European Commission.

#### Biocomplexity and Carbon Cycle Programs

The Biological Oceanography Program is active, along with others across NSF, in administering parts of the Biocomplexity Program (GEN-EN, CBC, CNH and IDEA) and the Integrated Carbon Cycle Research (ICCR) program. The results of the FY 2002 Biocomplexity Competition will soon be available at <[http://www.geo.nsf.gov/ere/ere\\_be-competitions.html](http://www.geo.nsf.gov/ere/ere_be-competitions.html)>. See the Chemical Oceanography section of this newsletter for more details on the FY 2002 ICCR competition.

Phil Taylor (prtaylor@nsf.gov)

Dave Garrison (dgarriso@nsf.gov)

Phil Yund (pyund@nsf.gov)

Lita Proctor (lproctor@nsf.gov)

Gayle Pugh (gpugh@nsf.gov)

## Chemical Oceanography

#### Integrated Carbon Cycle Research Program

NSF has begun making the first research awards under the new Integrated Carbon Cycle Research (ICCR) initiative. The Chemical Oceanography Program worked with our program officer colleagues in Physical Oceanography, Marine Geology and Geophysics, and Biological Oceanography in OCE as well as with our new partners in the Divisions of Earth Sciences and Atmospheric Sciences to administer the GEO-wide proposal competition. Altogether, we reviewed 194 proposals, organized as 138 multi-institutional collaborative projects, requesting \$120.4M.

The 100 ocean-oriented proposals were organized as 59 projects that requested a total of \$70.3M. It is interesting (but not surprising) that ocean scientists were about 1.7 times more

## GEO Town Meeting in San Francisco!

NSF's Directorate for Geosciences will hold a Town Meeting at the December AGU conference. The meeting offers an opportunity to hear the latest NSF news, including information on new and planned programs, and to meet and ask questions of staff. The meeting is scheduled for:

*Date: Monday, December 9*

*Time: 6:45-8:00pm*

*Location: Moscone Center  
Room 134*

**Please join us!**

likely to work on multi-institutional, collaborative teams than their terrestrial/atmospheric counterparts. Likewise, the requested cost of ocean-oriented projects also tended to be significantly higher than their terrestrial/atmospheric counterparts (by a factor of 1.8).

Eight of the ocean-oriented carbon projects were recommended for funding in FY 2002, seven through the JGOFS "ramp-down" funds from the CO Program and one with BO JGOFS ramp-down funds. The total FY 2002 commitment is approximately \$3.0M. In addition, the CO Program expects to contribute FY 2003 ramp-down funds toward the Repeat CO<sub>2</sub>/CLIVAR Global Hydrographic Survey, which is managed and funded collaboratively with the NSF Physical Oceanography Program and NOAA-OGP. The Survey will build on the past successes of the WOCE/JGOFS programs and will include observations of a number of new variables (e.g., dissolved iron, 13C, new tracers).

#### Staff Changes

In July, we sort of said good-bye to Peter Milne, who completed a two-year rotation as Associate Director in the CO Program. It was a "sort-of" good-bye because he's

actually just moved down the hall. Before returning to his homeport at the Rosenstiel School of Marine and Atmospheric Sciences in Miami, Peter will spend at least one more year at NSF in the Lower Atmospheric Facilities Oversight Section in the Division of Atmospheric Sciences. While we will certainly miss his devotion, hard work, and camaraderie in CO, we are confident that both NSF and the oceanographic community will continue to benefit from his efforts in our sister Division.

And while on the subject of Program staffing, we should also mention that the search for both a permanent program officer and a (two-year) rotator in CO are well underway. If you or an experienced marine chemist or marine geochemist you know may be interested in either of these positions, now or in the future, please contact us.

Don Rice (drice@nsf.gov)

Simone Metz (simetz@nsf.gov)

## Physical Oceanography

Once again, the Physical Oceanography Program would like to thank the many people, both in the U.S. and abroad, who have taken the time to read proposals and provide us with thoughtful reviews. These reviews are crucial to the process of proposal evaluation and it is a tribute to our community that the return rate has consistently been above 80%, the highest in the Division of Ocean Sciences. The program would also like to thank this year's panelists who, in the Spring or Fall, dedicated a substantial amount of time considering roughly 100 proposals.

### Inaugural Physical Oceanography Dissertation Symposium

The Physical Oceanography Dissertation Symposium (PODS) held its inaugural meeting in Breckenridge, Colorado, June 17-21, 2002. This program is designed to introduce new PhD graduates to each other and the physical oceanographic community and to promote the exchange of recent research results and ideas. PODS selected 21 participants from a diverse set of institutions, ranging from University of North Carolina to University of Hawaii with far reaching participants from the University of Reading, UK and the University of New South Wales, Australia who will be doing their postdoctoral studies in the United States. Dr. Walter Munk, one of the most acclaimed oceanographers of our time, gave the keynote presentation, "The Evolution of Physical Oceanography in the Last 100 Years." The meeting featured detailed presentations from each of the new graduates intermixed with discussion sessions on topics relevant to young investigators, such as new directions of science, proposal-writing, and how to initiate research programs. The research topics discussed reflected current

scientific and societal priorities including the energetics of the thermohaline circulation and its role in climate, the structure of estuarine and coastal exchanges, the role of internal tides in energy dissipation in the ocean, the formation of water masses in subtropical oceans, and the processes governing mixing and air-sea interaction. The next PODS will be held in October 2003 in Hawaii in conjunction with the DISCO meeting. For more information, see <<http://spars.aibs.org/pods/>>.

### Funding highlights

The span of ocean science covered by recent proposals continues to be broad. Topics range from the physics of mixing and dispersion to the structure and variability of the western boundary current regime. The May 2002 panel addressed over 100 proposals. Two large field efforts were funded, INSTANT and KESS. The INSTANT program, involving contributions of 6 countries (USA, France, Netherlands, Australia, Indonesia, Japan), will finally measure in a coordinated fashion the Indonesian ThroughFlow (ITF) in the key throughflow passages (Makassar Strait, Lifamatola Passage, Lombok Strait, Ombai Strait and Timor Passage) simultaneously. The measurements span a 3-year period beginning in August 2003. The INSTANT objectives are: 1) to determine the full depth velocity and property structure of the Throughflow and its associated heat and freshwater flux; 2) to resolve the annual, seasonal, and intraseasonal characteristics of the ITF transport and property flux; 3) to investigate the storage and modification of the ITF waters within the internal Indonesian seas, from their Pacific source characteristics to the Indonesian Throughflow water exported into the Indian Ocean; and 4) to contribute to the design of a cost-effective, long-term monitoring strategy for the ITF. The KESS program (Kuroshio Extension System Study) will look at the interaction of the Kuroshio Extension with the recirculation. There are plans for this experiment to go into the water in 2004. In addition, fieldwork on turbulence in the bottom boundary layer and fieldwork on the dynamics of estuarine buoyant plumes were funded.

### *What's new and what's coming up in the future?*

The big news from the Ocean Sciences Division at NSF this last spring and summer has been the new Ocean Observatories Initiative (OOI) (see article in the August 2002 issue of Sea Technology). But that's not all that's new for the oceanography community. The Ocean Information Technology Infrastructure report has come out (for a copy, send an email request to [oceanpubs@nsf.gov](mailto:oceanpubs@nsf.gov)) and the community has responded by planning additional workshops to define researchers' local (not supercomputer) computing needs, data management, and real-time data transfer needs. These workshops will address day-to-day infrastructure needs of the community, including those that tie in with OOI. In addition, we are starting to look for ways to bring new platforms, such as gliders and autonomous vehicles, to the point of research readiness, outfit them with the

sensors investigators need, and make them available to the individual researcher. We anticipate this will open new avenues of scientific investigation and will complement the use of time-series stations and observatories.

CLIVAR/Carbon Cycle

The Program continues to fund climate-related research and, with the recent emergence of detailed CLIVAR implementation plans, anticipates a growth in the number of CLIVAR and CLIVAR-related projects. The CLIVAR Steering Committee and Interagency Working Group have been discussing how to implement Climate Process Teams as part of the CLIVAR implementation. Look for more news about this in the near future. The CLIVAR program at NSF is coordinating its activities with the new CCRI (Climate Change Research Initiative) headed out of the Commerce Department by Dr. Jim Mahoney. For more information about the recent carbon cycle research panel, see the Chemical Oceanography Program News.

Staffing

The Physical Oceanography Program welcomes on board two new faces in 2002. Dr. Theresa Paluszkiwicz who managed the Ocean Modeling program at ONR for the past four years joined us as Program Director in a permanent slot in January of 2002 and Dr. Elise Ralph joined us as a new rotator.

Terri's checkered past includes many years doing fieldwork in coastal oceanography at the Skidaway Institute of Oceanography, and at Oregon State University. She obtained her Ph.D.

from the University of Maryland and studied the behavior of buoyant plumes in the ocean using numerical models. Terri spent several years at the Department of Interior, Minerals Management Service, where she introduced new models and drifter programs, followed by several years as a Senior Scientist and then manager of the Marine Sciences Lab of the Pacific Northwest National Laboratory focusing on ocean circulation modeling in support of DOE's climate change prediction. While at ONR, Terri sponsored many community building activities in the ocean modeling community, managed some of the NOPP activities for the Navy and spearheaded several multi-disciplinary research initiatives dealing with coupled boundary layer air-sea transfer and capturing uncertainty in the common environmental and tactical picture.

Elise, a graduate of the MIT/Woods Hole Oceanographic Institution Joint Program in Oceanography, has a joint appointment between the Large Lakes Observatory and the Physics Department at the University of Minnesota, Duluth campus. Her work with Larry Pratt included semi-analytical studies on the meandering and bifurcation of jets. While doing her postdoctoral work with Peter Niiler at Scripps, she was involved in the analysis of WOCE drifter data and identified the mean structure of Ekman spirals in the Pacific. Since moving to Minnesota she has been one of the leaders in the Great Lakes CoOP program using VM-ADCP, mooring and hydrographic work to identify the structure of mesoscale eddies and the amplitude of the wind-driven barotropic circulation in Lake Superior.

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*Physical Oceanography  
Dissertation Symposium 2002  
Participants*

# MARINE GEOSCIENCES SECTION

## Marine Geology and Geophysics

### MARGINS

The FY2002 MARGINS competition for funding was held in February 2002. All four MARGINS initiatives (Seismogenic Zone; Subduction Factory; Rupture of Continental Lithosphere (RCL); and Source to Sink (S2S)) competed for funding from a total budget of \$5.65 M. The panel considered 37 proposals of which 10 were eventually recommended for funding (including 2 for Seismogenic Zone, 5 for SubFac, 1 for RCL and 2 for S2S). An additional proposal, submitted to the MG&G core program (for RCL work in the Gulf of California), was also partially funded under the MARGINS program. The Program is pleased that all four initiatives are now operative, and although work on two of the “focus study sites” (RCL focus site of Red Sea and S2S focus site of Waipaoa sedimentary system) could not be initiated due to logistical or funding limitations, these can be started in the future when funds and logistics allow.

The MARGINS community held several workshops/town meetings during late 2001 and early 2002. Of these, the most noteworthy was the workshop on “Community Sediment Model” held in February 2002. It brought together over 60 sedimentary geologists, geophysicists, glaciologists, geomorphologists and software engineers to discuss a potential community-wide effort to develop protocols for a “community sediment model” that covers the entire source-to-sink system. The ultimate goal of such an endeavor would be to combine the separate efforts of these specialists and sub-communities into a common framework and common set of modular application tools. The envisaged products would be a set of flexible modular tools that would support a variety of modeling approaches, time scales and geographic locations (in the source-to-sink system), and a set of individual models produced from the modular components for applications in predicting sedimentary processes. Such a readily available “tool box” would enhance the predictive and “forward-modeling” capabilities for all sedimentary geology, but, due to its holistic vision, the first major beneficiary would be the MARGINS S2S initiative. The deliberations and the results of the workshop can be viewed at the CSM website <<http://instaar.colorado.edu/deltaforce/workshop/csm.html>>.

### Marine Earth System History (MESH)

Two workshops were held at NSF in July to help define MESH research priorities for the future. Peter deMenocal and Christina Ravello organized a workshop on tropical climate variability. Jerry Dickenson and Jim Zachos organized a workshop on the links between methane hydrates and climate. Additional information about the workshops and other MESH activities can be found on the MESH Program Office webpage <<http://mesh.who.edu>>. The MESH Program Office webpage is part of an effort by the MESH steering committee and NSF to foster communication among paleoceanographic researchers and set priorities for future work.

### Ridge 2000

Ridge 2000 (R2K) has held two major workshops since the first of the year; a Community Education workshop to provide background science information on the three Integrated Studies Sites, and an Implementation workshop to write implementation plans for each site. The papers presented at the Community Education workshop, as well as the implementation plans and Endnote bibliographic files for the sites, are available on the Ridge 2000 web site <<http://Ridge2000.bio.psu.edu>>. The R2K data policy and other updates on R2K activities and opportunities are also available on the web site.



Initial proposals for work at the integrated studies sites were submitted to the August 15 target date. Investigators are encouraged to look at the information on the R2K web site. Principal investigators are reminded that, in addition to proposal submission to NSF, in order to be considered for R2K funding the text of the proposal must be sent to the R2K office (Ridge2000@psu.edu). The R2K program announcement can be seen at <<http://www.nsf.gov/pubs/2002/nsf02011.html>>.

Ridge 2000 education and outreach activities got underway with a teacher workshop this July. The 3-day workshop explored ways to use the uniqueness of deep-sea research and exploration to enhance secondary science education. Thirty participants, primarily experienced teachers, district coordinators and curriculum specialists, focused on how to bring existing and new educational offerings to a broader secondary school audience. Working within the spirit of COSEE (NSF’s Centers for Ocean Science Education Excellence), results of this workshop will be shared with the larger ocean sciences community.

The NSF Geosciences Directorate expects to issue an announcement of opportunity in Biogeosciences. The Biogeosciences program will have some themes in common with R2K, and investigators may want to take advantage of this opportunity.

#### MG&G Program's Goal for Larger and Longer-Duration Proposals

The MG&G Program strongly supports the NSF-wide goal of larger and longer-duration awards. It is clearly in everyone's interest to spend less time writing and reviewing proposals and more time on research. For this reason, the Program is moving in the direction of funding larger and longer grants, provided that the additional funds and project scope/duration are well justified. Nevertheless, the Program and the reviewing community are also interested in identifying good, cost-effective projects of shorter duration as well. Moving gradually to larger and longer grants will mean that researchers' funding will come from a smaller number of grants and in larger average increments. However, moving in this direction will clearly involve revision of currently perceived ideas of how the funding "game" is played on the part of the MG&G community.

One related trend seen in the last few years is the increase in the number of small components in collaborative proposals. A collaborative proposal is one in which investigators from two or more organizations wish to collaborate on a unified research project. Collaborative proposals may be submitted to NSF by one of two methods: as a single proposal, in which a single award is being requested (with sub-awards administered to the collaborating organizations by the lead organization); or by simultaneous submission of proposals from different organizations with each requesting a separate award. The latter is more appropriate where collaborating institutions all have relatively large managerial and fiscal roles. Smaller components are better handled as sub-awards to the lead organization. In either case, the lead organization's proposal must contain all of the requisite sections as a single package that can be provided to the reviewers. The project description of this package must clearly include a description of the roles to be played by other principal investigators/organizations, specify managerial arrangements, and explain the advantages of a multi-organizational effort. Investigators are strongly encouraged to contact the cognizant NSF program officer prior to the submission of a collaborative proposal.

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## Ocean Drilling Program

These are busy times here at NSF as we prepare for an orderly conclusion and wind-down of the Ocean Drilling Program (ODP) and as we work toward the implementation of the Integrated Ocean Drilling Program (IODP), the new program of scientific ocean drilling that is slated to replace ODP starting October 1, 2003.

Joint Oceanographic Institutions, Inc. (JOI) submitted a five-year program plan (FY2003 – FY 2007) for ODP which includes the final year of operations and a four year phase-down period. NSF convened a special panel of experts to review and provide recommendations on the five-year plan. An important element of the proposed phase-down activities is the expectation that the long-term responsibility for ODP scientific and physical assets will be transferred to appropriate contractors and organizations in the planned follow-on program, the Integrated Ocean Drilling Program (IODP) as it is developed and implemented. The panel commented that Joint Oceanographic Institutions, Inc. (JOI) had prepared an excellent plan for the final year of operations. The panel did recommend, however, that additional contingency plans for information services and core curation should be considered in the event that IODP is delayed. These concerns were forwarded to JOI ODP management and, based on their formal response, NSF is confident that the termination of ODP will be completed in the same thorough and professional manner that has marked the last 20 years of ODP program operations.

NSF/ODP is fortunate to have acquired John Walter of NOAA as a visiting scientist/engineer to help with planning for the acquisition of IODP assets (non-riser vessel, repositories, etc.). John has experience with government contracting and ship acquisition. We are also pleased to announce that Dr. Jamie Allan has recently joined the Ocean Drilling Program as a Program Director. Jamie, who previously worked with the Program as a rotator, comes to us from the geology faculty of Appalachian State University.

The Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) and the Japanese Agency for Marine Science and Technology celebrated the launch of their riser drilling vessel. Dr. Joseph Bordogna, NSF Deputy Director, and Dr. Margaret Leinen, NSF Assistant Director for Geosciences, were part of an NSF delegation invited to attend the launch. Drs. Bordogna and Leinen were among the dignitaries on the reviewing stand for the naming ceremony and launching by Princess Sayako of Japan. The vessel is named 'CHIKYU,' which means earth.

NSF and MEXT are nearing completion of a memorandum defining their cooperation and participation as the Lead Agencies in IODP.

Based on the JOIDES Science Committee's (SCICOM) highest priority ranking of a proposal to drill on the Lomonosov Ridge, funds were approved in the FY2002 ODP Program Plan to begin the planning effort required to develop logistical and operational plans for Arctic drilling to the Lomonosov Ridge. Planning efforts by representatives of both ODP and the Joint European Ocean Drilling Initiative (JEODI) are now underway to mount a field program in 2004 under the auspices of IODP. In mid-February NSF approval was given to JOI to enter into a contract with the Swedish Polar Research Secretariat for "Services to Develop and Implement Plans for an Ocean Drilling Expedition to the Lomonosov Ridge, Central Arctic Ocean." In March, JOI briefed the interim Planning Committee (IPC) for IODP and the ODP Science Committee on the progress for Arctic drilling (a Microsoft Powerpoint presentation can be downloaded from <<http://www.joiscience.org/arctic.ppt>>).

The U.S. ODP Science Advisory Committee (USSAC) is sponsoring several workshops this year that bear on IODP. These include a workshop held in June to help define the characteristics, essential elements, and tasks of a program that will foster and sustain the full range of research and educational activities needed for successful U.S. participation in the IODP.

The U.S. ODP Science Support Program (USSSP) hosted an international workshop related to potential riser drilling in Japan's Nankai trough. The workshop was intended to explore and better define the scientific opportunities created by access to the seismogenic zone of a subduction megathrust in a great earthquake and tsunami generating region. A robust science plan was developed to implement such a project at the Nankai subduction zone. The conveners for this international workshop were Harold Tobin (U.S.), and Gaku Kimura, Shuichi Kodaira, and Hitoshi Mikada (Japan), and Pierre Henry (France).



Launch of the 'CHIKYU', the Japanese riser drilling vessel

A third USSSP workshop/tutorial/short course is being planned for early in 2003 to help the U.S. scientific drilling community better understand site development requirements in IODP that will be required for complex drilling programs leading to riser drilling. This, hopefully, will stimulate the submission of proposals for site surveys and regional geophysical studies that ultimately lead to robust drilling programs.

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## INTEGRATIVE PROGRAMS SECTION

### Education

#### Focus on Undergraduate Faculty and Education

The National Science Foundation supports undergraduate education in a wide variety of ways, but primarily the focus is on enabling undergraduates to experience research, improving the curriculum and facilities available for undergraduate education, and improving the research and pedagogical experience of the faculty who teach undergraduates.

#### *For Students:*

A long-standing program known as the Research Experiences for Undergraduates (REU) program supports Sites (for 10-15 students) and supplements (for 1-2 students) so that undergraduates can gain research experience. These sites and supplements are funded by every Division within NSF, creating research opportunities for thousands of students each year. Twenty OCE-funded REU Site Programs are underway this summer at oceanographic institutions across the country. If you teach undergraduates and are not aware of these opportunities for paid internships in ocean science research, please visit our web site at <<http://www.nsf.gov/home/crssprgm/reu/reuoce.htm>>. For any students who prefer a semester-long experience, Bermuda Biological Station and Dauphin Island Sea Laboratory in Alabama both run semester-long programs in the Fall.

Drs. Russell Cuhel and Carmen Aguilar, University of Wisconsin Milwaukee, coordinate a very successful program that encourages undergraduate participation in AGU and ASLO meetings by organizing a poster session for undergraduate research. As part of this effort, they bring REU students to a major Oceanographic meeting each year to present results of

their summer research. In February 2002 about 29 students attended the AGU/ASLO Ocean Sciences Meeting in Hawaii. The King Kamehameha Award for best poster was won by Denise Akob (Smithsonian Environmental Research Center REU). These poster sessions are excellent ways to introduce undergraduates to the oceanographic research community and provide excellent recruitment opportunities for scientists and employers.

*For Curriculum and Laboratory Improvements and Undergraduate Faculty:*

NSF's Directorate for Education and Human Resources (EHR) includes the Division of Undergraduate Education (DUE) <<http://www.ehr.nsf.gov/ehr/DUE/>>. This Division supports undergraduate science education in all disciplines supported by NSF. One of the DUE programs of most interest to undergraduate faculty is the Course, Curriculum, and Laboratory Improvement (CCLI) program. CCLI seeks to improve the quality of science, technology, engineering, and mathematics (STEM) education for all students and targets activities affecting learning environments, course content, curricula, and educational practices. The program has three tracks:

1. Educational Materials Development (CCLI-EMD) projects are expected to produce innovative materials that incorporate effective educational practices to improve student learning of STEM, for example projects to develop textbooks, software, or laboratory materials.
2. National Dissemination (CCLI-ND) projects are expected to provide faculty with professional development opportunities to enable them to introduce new content into undergraduate courses and laboratories, and to explore effective educational practices to improve the effectiveness of their teaching. Projects should be designed to offer workshops, short courses, or similar activities on a national scale in single or multiple disciplines.
3. Adaptation and Implementation (CCLI-A&I) projects are expected to result in improved education in STEM at academic institutions through adaptation and implementation of exemplary materials, laboratory experiences, and/or educational practices that have been developed and tested at other institutions. Proposals may request funds in any budget category supported by NSF, or may request funds to purchase only instrumentation.

For more details, including program solicitations and deadline information, visit the DUE website at <<http://www.ehr.nsf.gov/ehr/DUE/programs/ccli/>> or contact Jill Singer ([jsinger@nsf.gov](mailto:jsinger@nsf.gov)), the program officer in charge of geoscience-related CCLI proposals.

Under the CCLI program, a number of notable projects have been developed for geosciences. One of these is the second phase of the Faculty Institutes for Reforming Science Teaching through Field Stations (FIRST II) project (funded by NSF DUE #0088847).

FIRST II is available as a resource for college faculty and research scientists who wish to gain experience in active, inquiry-based undergraduate science teaching that increases student learning. FIRST plans to offer workshops that model this kind of teaching at field stations, marine laboratories, or other field sites. FIRST sites will serve as focal points for the formation of coalitions of faculty who will implement and sustain reform in undergraduate biology, geology, and other science education in their colleges and universities.

Each FIRST coalition has been initiated by teams of three faculty (the field station teams) who work with groups of three faculty from each of five institutions in their region (the institutional teams). The field station teams provide professional development activities to the institutional teams. In addition, field station teams will provide a mechanism for national dissemination of instructional practices, materials, and support systems for faculty interested in improving their teaching.

Two marine laboratories are currently involved in FIRST: Louisiana Universities Marine Consortium (LUMCON) and the Oregon Institute of Marine Biology (OIMB). Other institutions include the University of Washington, Michigan State, Howard University, the U. of Akron, Michigan State University, San Diego State University and the Archbold Field Station. For a map of current FIRST coalitions, see the project website at <<http://www.first2.org>>.

The FIRST II team leader at LUMCON is Chris Finelli. Chris is also a current OCE-CAREER awardee who considers FIRST to be a good potential source of information on education for colleagues who may be considering applying for Faculty Early Career Development program awards or who want to better integrate research and education activities. Participation in FIRST II could be an ideal way to learn about best practices in curriculum, pedagogy, and evaluation. Should you or any of your colleagues be interested in learning more about the FIRST II project, please encourage them to contact Chris directly ([cfinelli@lumcon.edu](mailto:cfinelli@lumcon.edu)). Other sources of information include the FIRST Project Principal Investigator Jan Hodder at the Oregon Institute of Marine Biology ([jhodder@oimb.uoregon.edu](mailto:jhodder@oimb.uoregon.edu)) and coalition members at various FIRST sites around the country.

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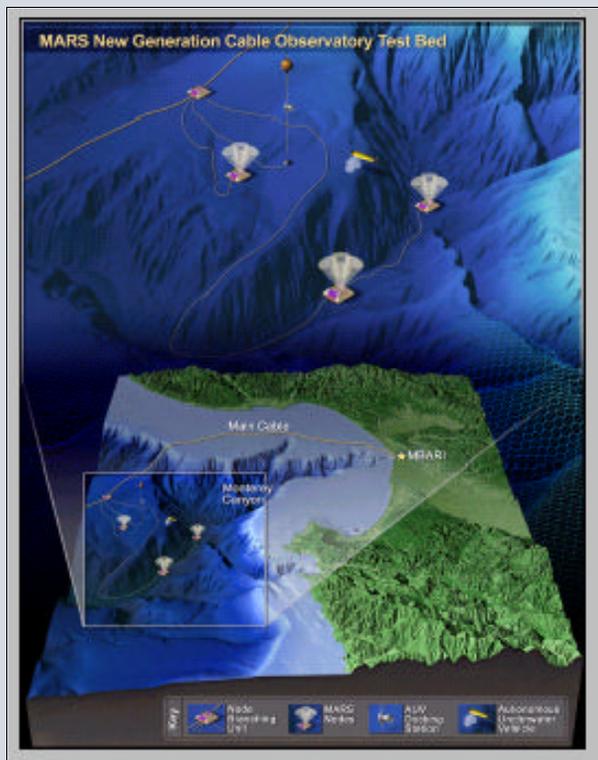
## Ocean Technology and Interdisciplinary Coordination

### Ocean Technology

The Ocean Technology Program accepts proposals for new instrumentation development that has broad applicability to ocean science research. Ocean technology proposals should enhance the observational, experimental, and/or analytical capabilities of the ocean science research community. Current priority areas include the development of sensors and sampling strategies to optimize investigations at ocean observing systems, instruments facilitating time-series observations, and the development of biological and chemical sensors. When submitting proposals, investigators are encouraged to provide a description of their plans to facilitate and encourage broader community use of the proposed instrumentation once it is developed. This can be included as supplemental documentation in FastLane.

The Ocean Technology Program is responsible for continued planning for the Ocean Observatories Initiative. As part of this planning, OCE has sponsored the Committee on Scientific Cabled Observatories for Time Series (SCOTS) that will provide advice on the scientific problems that require, or would most effectively be addressed by, the use of electro-fiberoptic cables in the ocean environment. This committee will also identify the strategies needed to carry out the science identified. The strategies considered will include criteria for locating a cabled observatory and other design considerations (such as sensor requirements, data transfer, power needs, etc.). The SCOTS committee recently held a workshop in Portsmouth VA (August 27-28) to gather community input relevant to their charge. This workshop gathered over 50 participants from all disciplines of ocean science and technology. Using recent planning documents, this group helped define cross-cutting scientific themes that would facilitate using the high power and bandwidth provided by seafloor cables and identified the infrastructure that must be put in place to enable this science. The SCOTS committee has posted its draft report for public comment on the CORE webpage <<http://www.coreocean.org/DEOS>> where additional information on this activity can be found.

### ***MARS: Test Bed for a High-Power, High-Bandwidth, Regional Cabled Observatory***



OCE has recently funded a project to design and install an advanced, cabled observatory in Monterey Bay to provide basic scientific capabilities and enable the testing of sensors and instrumentation that could be used on future cabled observing systems. The Monterey Accelerated Research System (MARS) will consist of a backbone cable along the northern side of Monterey Canyon to a branching unit situated in ~1200 meters of water that will support the various MARS nodes to which instrumentation will be connected. MARS will provide the proof-of-concept to investigate the effectiveness of a cabled system for studying episodic processes using long-term, high-power, large-bandwidth infrastructure for multidisciplinary, in situ exploration, observation, and experimentation. In addition, this system will provide a scientific and financial proof-of-concept for cabled ocean observatory systems, develop and demonstrate key technologies to be used in future observatory systems, stimulate and facilitate the development of oceanographic instrumentation, and provide an upgrade and testing facility for new technologies as they become available.

In addition to the SCOTS committee, OCE has also sponsored a study by the National Research Council that will develop an implementation plan for a network of seafloor-based observatories that would include both cabled seafloor nodes and moored buoys to support multidisciplinary research. These observatories would be located in both coastal and open-ocean areas. Specifically, the committee will: use existing reports and their own expertise to describe the scientific problems that will be addressed by a network of seafloor-based observatories (both cabled and moored buoy systems), describe the strategies needed to carry out the science identified, and use the plan developed to describe the significance and relationship of NSF's research-based observatory network with the national Integrated Ocean Observing System being developed by Ocean.US. The committee roster for this study can be found on the NAS webpage <<http://www4.nationalacademies.org/dels/osb.nsf/web/activities?OpenDocument>>.

### Coastal Ocean Processes Program (CoOP)

There has been a lot of recent activity in the CoOP program. Proposals related to the Announcement of Opportunity (AO) for research on buoyancy-driven transport processes have been submitted and are out for review. This AO was developed from an open community workshop that defined the research needed to better understand processes controlling buoyancy-driven systems influenced by freshwater flows. The workshop results and Science Plan were published as the CoOP Report Coastal Ocean Processes: Transport and Transformation Processes over Continental Shelves with Substantial Freshwater Inflows (CoOP Report No. 7). This AO is driven by the importance of buoyancy-driven transport in controlling the cross-shelf transfer, transformation, and fate of biological, geological and chemical materials on continental margins. Proponents were asked to select study locations that have buoyancy-influenced flow as a major component of coastal transport with flow-induced dissolved and particulate constituent loads large enough to allow detection and quantification. Furthermore, the buoyant input should be sufficiently large to influence the structure and/or productivity of biological communities that are affected by freshwater inflow. The awards related to this announcement are expected to be announced by mid-December.

In addition, CoOP held a workshop May 7-9 in Savannah, GA, entitled "Coastal Ocean Processes and Observatories: Advancing Coastal Research". This workshop had more than 70 attendees representing at least 35 institutions from the United States, Great Britain and Canada. One goal of the workshop was to articulate the role coastal observing systems have in the study of coastal processes. Working groups first outlined coastal ocean processes that can best be investigated with coastal observatories. Discussions then focused on those processes that could be studied by a single observatory, by linking observatory networks and by combining observatory-

based observations and products with traditional sampling techniques. The second goal of the workshop was to identify which existing observatory capabilities are most appropriate for addressing critical research questions and to prioritize observatory development areas which would provide the greatest benefit to future coastal oceanographic research. The report from this workshop, as well as the workshop agenda and list of attendees, is now available on the CoOP website at <<http://www.skio.peachnet.edu/coop/>>.

I am also happy to announce that Rick and Debbie Jahnke have agreed to continue their excellent management of the CoOP office for another term. They have done a great job organizing and managing the many CoOP activities of the past year and we greatly appreciate their efforts.

Alexandra Isern (aisern@nsf.gov)

## Oceanographic Instrumentation and Technical Services (OITS)

### Major Research Instrumentation Program (MRI)

The deadline for MRI submittals is the fourth Thursday of January each year. The solicitation for the 2003 MRI competition is available at <<http://www.nsf.gov/od/oia/solicitations/start.htm>>. Results of the 2002 MRI competition are now posted at <<http://www.nsf.gov/od/oia/programs/mri/ta.htm>>. MRI awards by the Division of Ocean Sciences are listed together with our oceanographic instrumentation awards on the Ocean Sciences web site <<http://www.geo.nsf.gov/oce/>> (select Award Search under Funding, then Awards by Program, and use Oceanographic Instrumentation and the relevant fiscal year to search).

For general information about MRI, refer to the solicitation or contact the Office of Integrative Activities at [mri@nsf.gov](mailto:mri@nsf.gov). For specific information regarding Ocean Sciences-related submittals, contact Alexander Shor at [ashor@nsf.gov](mailto:ashor@nsf.gov).

### Oceanographic Instrumentation Program (OIP)

Prior year OIP awards can be found at the same location as OCE MRI awards, described above. With only rare exceptions, instrumentation requests via OIP should be for shared-use instruments that will be supported by shipboard technical personnel at UNOLS operating institutions. For more information, see guidelines (NSF Publication 00-39) for this and other Ocean Sciences facilities programs at <<http://www.nsf.gov/cgi-bin/getpub?nsf0039>>. Proposals received for the September 15, 2002 deadline will be considered for support in Fiscal Year 2003.

A significant element of OIP support in 2002 was the replacement of acoustic current profilers on a number of UNOLS vessels, bringing the number of UNOLS ships to be equipped with new, phased-array, vessel-mounted current profilers by year end to at least 12.

#### Oceanographic Technical Services Program (OTSP)

Support under OTSP is provided by 3-year awards to UNOLS operators, with negotiated annual budgets based on actual numbers of operating days and specific scheduled requirements. Proposals for Calendar Year 2003 were due on October 15, 2002, and will be awarded during the first quarter of the new year. 2003 is the start of the next 3-year proposal cycle, so submitted proposals will undergo extensive peer review this year.

We note that UNOLS has recently completed an extensive revision of the UNOLS Cruise Assessment form, improving the questionnaire and creating an online interface that is quite straightforward. **We strongly encourage researchers using the UNOLS ships, as well as the technical personnel assigned to the ships, to complete a cruise assessment for every cruise.** This is the principal source of information on operational quality and concerns for operators, for the NSF Ship Inspection Program, and for the program managers in the facilities programs at sponsoring agencies. If the operator does not hear about issues that occur during a cruise, they cannot do much to prevent them from happening in the future. In the same vein, if the funding agencies do not know a problem exists aboard a vessel, then funds won't be available when needed to correct the problem. So please fill them out, and help us improve the quality of science support across the UNOLS fleet!

One area of responsibility of OTSP that may not be well known by the user community is our responsibility for oversight of cruise planning. In addition to their responsibilities at sea, the shipboard technical services groups supported under OTSP manage cruise planning, per their program guidelines available at <http://www.nsf.gov/cgi-bin/getpub?nsf0039> on pp. 25-26:

(excerpted from NSF 00-39)

#### A. Communications and Coordination:

1. Learn cruise objectives and what equipment and services will be required.
2. Advise users and agencies of any costs or fees for equipment and services not covered by basic funding.
3. Coordinate logistics.
4. Inform users of ship layout, capabilities, and availability of shared-use equipment, including computers, communication systems, and procedures to operate user-provided instruments and computers on the vessel.

#### B. Maintenance, Repair, Storage and Calibration

1. Maintain appropriate quality assurance procedures for all instrument systems including appropriate property control and use records.
2. Perform routine maintenance procedures and coordinate specialized maintenance and calibration tasks requiring service of others.
3. Maintain calibration and maintenance logs.
4. Assure proper storage of shared-use gear when not in service.

#### C. Shipping, Staging and Preparation

1. Prepare shared-use equipment and project-specific gear for shipment to and from ports of call.
2. Accept, prepare and control project-specific gear for staging prior to cruises.
3. Coordinate vessel loading and unloading.

#### D. Monitor Hardware and Software Developments.

Monitor scientific hardware and software developments and take appropriate steps to provide modern and effective common-use science capability.

#### E. Data Archiving.

Assist researchers in providing digital and sample data acquired with shared-use instrumentation to National Data Centers for permanent archiving in accordance with NSF Data Policy.

Individual operating institutions set their own policies about what level of pre-cruise planning is required. Procedures can be found on operating institution web sites, as well as in cruise planning manuals. Many institutions encourage (or require) participation by scientists in pre-cruise planning meetings. This is especially true for "expeditionary" programs in which the vessel is away from home port for several cruises, or logistics are complex. **NSF strongly encourages participation in the cruise planning process as a means of ensuring that scientists and operators are aware of each others' responsibilities and requirements.** Information shared often results in cost and time savings for the PI, as well as providing the basis for better support at sea.

We note that costs associated with participation in cruise planning efforts are normally the PI's responsibility, and should be budgeted as part of the research project. If schedule changes or other complications create budget difficulties associated with planning, however, the affected scientists or operators should contact the relevant research program or the OTSP program manager to see if assistance is available.

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## Staff Changes



### Front Office

As the Division Secretary, Gloria Aguilar is responsible for providing secretarial and administrative assistance to the Division Director and other members of the Division's front office. Prior to joining OCE, Gloria worked for NSF for more than fifteen years, most recently in the Directorate for Engineering.

Sharon Alston arrived in May as the Division's new Financial Operations Specialist in time to process the grants resulting from the Spring target date. Sharon has prior experience in grant and proposal management at NSF.



As Program Assistant with the Division's front office, Lisa Elkins is performing administrative and programmatic duties for the Division. Lisa previously served in a variety of capacities with the military, including as a Program Secretary with the Office of Naval Research.

### Ocean Section

Shelby Walker is a Knauss Sea Grant Fellow working with the Division's Ocean Section. Presently finishing her doctorate from the College of William and Mary, Shelby's focus is on organic contaminant geochemistry. Shelby is involved in a variety of Division activities, including ocean observations and programmatic work in Chemical Oceanography.



### Biological Oceanography



The Biological Oceanography Program welcomed Lita Proctor this Spring as Associate Program Director. Lita is a visiting scientist from Florida State University, where she has served in faculty and research positions since 1994. She also serves as a Visiting Scientist with the U.S. Geological Survey and has an appointment with the Center of Marine Biotechnology (COMB)/UMBI. With expertise in molecular microbial ecology, particularly in benthic systems, Lita is joint team leader for the next Biocomplexity GEN-EN program in addition to her core program responsibilities.

### Ocean Drilling Program

John Walter joined the Ocean Drilling Program this Spring on a detail from NOAA's Office of Marine and Aviation Operations where he is a Senior General Engineer. John will provide oversight in the selection/charter/conversion of an offshore drilling vessel for the Integrated Ocean Drilling Program that will begin in FY 2003.



Jamie Allan has joined the Ocean Drilling Program as a Program Director. Jamie, who previously worked with the Program as an IPA, most recently served as the Chair of the Geology department at Appalachian State University. His association with the Ocean Drilling Program goes back to 1989, when he began work as an ODP Staff Scientist at Texas A&M University. His responsibilities include oversight of the ODP operational contract as well as facilitating the startup of the forthcoming Integrated Ocean Drilling Program (IODP).

Ann Noonan arrived in June as the Program Assistant for the Ocean Drilling Program. Ann brings with her many skills stemming from her extensive work experience with the Army, most recently as a military personnel management specialist.



## Physical Oceanography

Theresa Paluszkiwicz arrived in January as a Program Director for Physical Oceanography after managing the ocean modeling program at the Office of Naval Research for four years. Prior to ONR, Terri had ten years of research and program management experience, primarily in coastal ocean modeling, with Pacific Northwest National Laboratory, Minerals Management Service, and the University of Alaska.

Elise Ralph, an IPA from the University of Minnesota, recently joined the Physical Oceanography Program as Associate Program Director. A graduate from MIT/WHOI, Elise's research interests include hydraulics and instabilities of zonal flows and circulation of large lakes.



## Vacancies in the Division of Ocean Sciences

We are presently seeking applicants for several positions within the Division. Vacancy announcements with further details about the positions listed below may be accessed on the NSF web site at <http://www.nsf.gov/oirm/hrm/jobs/>. Each of the positions entails the following duties and responsibilities:

Assists in the implementation, review, funding, post-award management, and evaluation of the program and contributes to the intellectual integration with other programs supported by the Division. Designs and implements the proposal review and evaluation process for relevant proposals. Selects well qualified individuals to provide objective reviews on proposals either as individuals or as members of a panel. Conducts final review of proposals and evaluations, and recommends acceptance or declination. Manages and monitors on-going grants, contracts, inter-agency and cooperative agreements to ensure fulfillment of commitments to NSF. Evaluates progress of awards through review and evaluation of reports and publications submitted by awardees and/or meetings at NSF and during site visits. Contributes to the responsibility for establishing goals and objectives, initiating new program thrusts and phasing out old projects. Recommends new or revised policies and plans in scientific, fiscal, and administrative matters to improve the activities and management of the Program.

Qualifications vary as follows:

### **Assistant or Associate Program Director, Oceanographer AD-2 or AD-3 respectively; Biological Oceanography Program (Rotator)**

For the Assistant Program Director level, applicants must have a Ph.D. or Master's or have equivalent experience in biological oceanography, marine ecology, or related disciplinary fields, plus two or more years of research experience beyond the Ph.D. For the Associate Program Director level, applicant must have a Ph.D. or have equivalent

experience in biological oceanography, marine ecology, or related disciplinary fields, plus four or more years of research experience beyond the Ph.D. Familiarity with a broad spectrum of the ocean science research community and demonstrated administrative ability are desired. Applicants who are multifaceted and have multidisciplinary experience and capabilities are also desired.

### **Associate Program Director, Oceanographer AD-3; Chemical Oceanography Program (Rotator)**

Applicant must have a Ph.D. or have equivalent experience in chemical oceanography, marine chemistry, marine geochemistry, or related disciplinary fields, plus four or more years of research experience beyond the Ph.D. Familiarity with a broad spectrum of the ocean science research community and demonstrated administrative ability are desired. Applicants who are multifaceted and have multidisciplinary experience and capabilities are also desired.

### **Associate Program Director or Program Director, Oceanographer AD-3 or AD-4, respectively; Marine Geology and Geophysics Program (Rotator)**

We have specific interest in persons in the following disciplines: paleo-oceanography, marine geology and geophysics. For the Program Director level, applicants must have a PhD or equivalent experience in geoscience research plus six or more years of successful research, research administration, education and/or managerial experience pertinent to the above disciplines. For the Associate Program Director level, applicants must have a PhD or equivalent experience in one of the above disciplines plus four or more years of successful research, research administration, education, and/or managerial experience. In addition, a broad understanding of the current status of the relevant U.S. academic scientific community and its inter-relationship with NSF, other federal agencies, and international planning efforts is desirable.

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Grantees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities, and persons with disabilities to compete fully in its programs. In accordance with federal statutes, regulations, and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program).

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement or contact the program coordinator at (703) 292-6865.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Relay Service (FRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation regarding NSF programs, employment, or general information. TDD may be accessed at (703) 292-5090 or through FRS on 1-800-877-8339.

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